



Courtesy NOAA

## **Marine Environmental Science Laboratory: ENV 115L**

### ***Course Syllabus***

### **Spring 2025**

*Human alteration of earth is substantial and growing. Peter M. Vitousek et al.*

*Saving our planet, lifting people out of poverty, advancing economic growth... these are one and the same fight. We must connect the dots between climate change, water scarcity, energy shortages, global health, food security and women's empowerment. Solutions to one problem must be solutions for all.*

Ban Ki-moon

*Climate change is happening, humans are causing it, and I think this is perhaps the most serious environmental issue facing us.*

Bill Nye

*By the mid-1950s manatees were already scarce, and monk seals, once common as far north as Galveston, were gone. By the end of the 20th century, up to 90 percent of the sharks, tuna, swordfish, marlins, groupers, turtles, whales, and many other large creatures that prospered in the Gulf for millions of years had been depleted by overfishing. The coral reefs had declined by half, and hundreds of miles of marshes, mangroves, and sea grass meadows were replaced by houses and hotels, malls and marinas. Rivers that once nourished the Gulf with vital nutrients now carried toxic loads of pollutants, forming massive "dead zones."*

Sylvia Earle

**School & Dept.:** School of Natural Sciences and Mathematics; Environmental Programs  
**Meeting Days:** M  
**Meeting Hours:** 2:30 - 5:20  
**Location:** Henry Hall Lab #4  
**Instructor:** Dr. Gail Grabowsky  
**E-mail address:** [ggrabows@chaminade.edu](mailto:ggrabows@chaminade.edu)  
**Phone:** 735-4834 (ext. 834); cell 808-387-9319 (you may text anytime!)  
**Office Location:** Wesselkamper Science Center, room 105  
**Office hours:** Tu/Th 2:00-5:30 PM; WF 3:00-5:30 PM; Or by appointment (Zoom or in person)  
**Course Google Drive Folder:** [HERE](#)

**University Course Catalog Description:** This course introduces students to the scientific methodologies used to determining and studying the current major marine environmental issues. Issues studied include: global warming, marine pollution, marine debris, oil spills, fisheries exploitation, fisheries by-catch, marine alien species and coral reef degradation. Laboratory exercises are conducted in the field and on the Chaminade campus. Students taking this course will be engaged in field science activities. Course must be taken concurrently with ENV 115.

#### **Marianist Values:**

This class represents one component of your education at Chaminade University of Honolulu. An education in the Marianist Tradition is marked by five principles and you should take every opportunity possible to reflect upon the role of these characteristics in your education and development:

1. Education for formation in faith
2. Provide an integral, quality education
3. Educate in family spirit
4. Educate for service, justice and peace
5. Educate for adaptation and change

#### **Native Hawaiian Values:**

Education is an integral value in both Marianist and Native Hawaiian culture. Both recognize the transformative effect of a well-rounded, value-centered education on society, particularly in seeking justice for the marginalized, the forgotten, and the oppressed, always with an eye toward God (Ke Akua). This is reflected in the 'Ōlelo No'eau (Hawaiian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua ('Ōlelo No'eau 364) May I live by God
2. Provide an Integral, Quality Education (Na'auao) Lawe i ka ma'alea a kū'ono'ono ('Ōlelo No'eau 1957) Acquire skill and make it deep
3. Educate in Family Spirit ('Ohana) 'Ike aku, 'ike mai, kōkua aku kōkua mai; pela iho la ka nohana 'ohana ('Ōlelo No'eau 1200) Recognize others, be recognized, help others, be helped; such is a family relationship
4. Educate for Service, Justice and Peace (Aloha) Ka luma kū o ka no'eau ('Ōlelo No'eau 1430) Education is the standing torch of wisdom
5. Educate for Adaptation and Change (Aina) 'A'ohe pau ka 'ike i ka hālau ho'okahi ('Ōlelo No'eau 203) All knowledge is not taught in the same school

#### **What this course counts for:**

This course counts for your Quantitative Reasoning requirement for your General Education program. It is also a course that many of our Environmental Studies, Environmental Science and Biology majors like to take for its content and because it prepares them for Advanced Marine Science.

#### **Student Learning Outcomes for this particular course:**

At the end of this course students will be able to:

- ✿ Describe what science is and how scientific research is conducted
- ✿ Experience reading the primary scientific literature
- ✿ Apply the basic units used in making scientific measurements
- ✿ Collect, record, analyze, present and interpret scientific data
- ✿ Write up a scientific research report
- ✿ Properly collect, identify and preserve marine biological specimens
- ✿ Identify particular marine organisms and their behaviors in the field
- ✿ Conduct field measurements in a variety of types of marine habitats
- ✿ Document the physical effects of a number of the major marine environmental issues
- ✿ Witness some of the detrimental effect(s) marine environmental issues have on marine ecosystems

### **Texts:**

**Required:** None; Your labs are coming from many sources! Informational handouts will be given in e-copy prior to lab. All documents will be posted on the course Google Drive website in the sub-folder titled "Lab related." Worksheets will be handed out in hard-copy.

**Course Website** (Everything you need is [HERE](#)! Canvas provides important links to this Google Drive folder!):

**Grading & Assessment:** Your grade in this course will be based on the following. Each of the items/activities listed below will be described to you in writing or orally in class.

Grading will be quantified as follows:

|  |                         |
|--|-------------------------|
| Laboratory worksheets, quizzes, homework, etc.   | 40% (200 points)        |
| Hawaiian Invertebrate/Vertebrate Organism Exposé | 20% (100 points)        |
| Makapu'u Formal Lab Write-up                     | 20% (100 points)        |
| Attendance                                       | 20% (100 points)        |
|  | <b>500 points total</b> |

Letter grades are interpreted as follows:

- A = Outstanding scholarship and an unusual degree of intellectual initiative
- B = Superior work done in a consistent and intellectual manner
- C = Average grade indicating a competent grasp of subject matter
- D = Inferior work of the lowest passing grade, not satisfactory for fulfillment of prerequisite course work
- F = Failed to grasp the minimum subject matter; no credit given

### Attendance and Your Grade:

If you miss a lab your absence must be excused if it is not to *formally* effect your grade. Excused absences occur when you bring in a doctor's note, a funeral announcement for a family member, notice of participation in athletic events, etc. Unexcused absences occur when you were working, surfing, sleeping, cramming for an exam in another class, etc. Unexcused absences cost you the assignment you missed that day: you receive a zero for it. Excused absences mean that the lab you missed is not counted in determining your lab grade. You may make up a lab (if it is possible to do so for that particular lab) IFF (that means IF and ONLY IF) it was an excused absence. You cannot make up a lab you missed for an unexcused reason.

### Grading Procedures:

Laboratory worksheets, the Organism Exposé and the Formal Lab Write-up will be graded on *effort*, *correctness* (when there is a correct response etc.) *thoughtfulness* and *organization*. Effort in general manifests itself as neatness, completeness, thoroughness, calories expended per unit time(!), timeliness, correct spelling, any extra creative things you do above-and-beyond what is expected, etc. Correctness means do your statements jive with

corresponding scientific knowledge, do your conclusions follow from the evidence before you, did you calculate an equation correctly, interpret a graph accurately, make a table that illustrates your data properly, etc.

Thoughtfulness can show up in many ways, perhaps you really think things through, trying to consider all the variables or you worked hard to tie pieces of evidence together, maybe you consider something that may be important that everyone else ignores. By being “thoughtful” I mean that you have done some thinking, really reflected upon a topic, have given it some time, have analyzed it, etc. thoroughly. Organization pertains to the design of your presentation. Did you present the material, answers, ideas, etc. in a way that is understandable, efficient and follows existing protocol (if they exist and/or are explained prior to the assignment).

#### Equipment You'll Need for Lab:

1. **Snorkel Gear:** The Environmental Studies Program has purchased REALLY GOOD masks and snorkels for you to check out for each lab! (Dr. Gail was tired of seeing students – who had purchased cheap masks to save \$ - with fully fogged-up equipment seeing nothing underwater!) So borrow Chaminade's and if you like snorkeling Dr. Gail will help you to know where to go and what to look for in good equipment of your own. It is however NOT a pre-requisite that you be able to snorkel/swim to take this class. ENV has also purchased really nice rash guards for you to borrow so that we don't harm the reef and larval fish by using sunscreen ☺. You will need to buy/bring your own fins.
2. **Lab Coat and Covered Shoes:** For when we are in lab. Details will be explained at the first lab meeting.
3. **Shoes that can get wet:** Be sure you have something for your feet that you can cross wet basalt rocks in! These will get wet.
4. **Water Bottle:** Bring this to all labs that occur in the field.
5. **Hat/etc.:** To protect you when we are in the field.
6. **A love of the field and getting dirty, wet or cold:** Guys this is a marine course so you will have/get to go outside! Be ready to be hot/cold, dirty etc. and prepare accordingly. Bring sunscreen if you need it, a towel, a wetsuit, etc. if you'd like and have a mind to be IN nature!



#### How ENV 115 Meets the Credit Hour Policy:

There are three components to the amount of time students will spend in a course:

1. **Seat time:** 12 labs at 2 hours each = 24 hours
2. **Time spent on key assignments:**
  - 2.1. Memorizing names of 40 Hawaiian marine Organisms/studying for quizzes! 2 hours x 4 ID quizzes = 8 hours
  - 2.2. Lab worksheets = 6 hours
  - 2.3. Preparing Formal Lab Write-Up = 10 hours

**TOTAL: 48 Hours**

This syllabus and course schedule are living documents: they are free to change. I try to adhere as closely as possible to them for your convenience, but there will be times when weather or sea states may force me to change our lab plans or there may be times in which we will take longer on a particular topic or add or delete a topic to enhance the course. I like to be able to react to you as the course proceeds and go with the flow a bit in order to make the course experience sort of custom fit to you!

**You are responsible for all of the information in this document: losing it or not reading it do not make you exempt from knowing what's in it!**

**Use your syllabus to keep you organized and aware of important dates and how your grade is determined.**

Blue highlight below means option to go IN the water



Green highlight below means it's a fieldtrip but no snorkeling is involved!

## Marine Environmental Science Laboratory Course Schedule Spring 2025

| <u>DATE</u>  | <u>LAB TOPIC</u>   | <u>ACTIVITIES</u>  |
|--|--|--|
| 1/6  | Course Intro and Mechanics;<br>Online Ocean Quizzes  | Review syllabi; Choose critters; Explain <a href="#">HERE</a> ; <a href="#">HERE</a> and <a href="#">HERE</a> !              |
| 1/13   | <a href="#">Introductory DVD</a> & Awareness Lab<br><a href="#">UNESCO Ocean Literacy Portal</a> | <b>Coral common &amp; species names Quiz!</b>  |
| 1/20   | NO LAB MEETING<br>Dr. Martin Luther King Jr Day  | UPLOAD Ocean related photos OR videos you LOVE <a href="#">HERE</a> ! Optional snorkel lesson Ala Moana!                     |
| 1/27   | <b>Current Marine Issues Around the World</b>  | <b>Share a marine issue of concern to you</b><br><b>Inverts other-than coral Quiz! (Common names)</b>                        |
| 2/3  | The Big Picture: Survey the Aina and Coastal Development from Above                              | <a href="#">Diamond Head Hike</a> ; Lab worksheet;<br><b>Bony fish Quiz! (Common names)</b>                                  |
| 2/10   | Marine Biodiversity & Taxonomy Lab<br>Biodiversity Power Point                                   | Gallery Walk<br><b>All remaining critters Quiz!!! (Common names)</b>   |
| 2/17   | NO LAB MEETING – Presidents' Day   | UPLOAD Ocean related songs you LOVE <a href="#">HERE</a>   |
| 2/24   | <b>Hawaiian Organism Exposé Presentations</b>  | <b>Natural history of Hawaiian marine critters</b>   |
| 3/3  | Marine Plants = Limu Classification  | <a href="#">Diamond Head</a> ; <b>Need snorkel gear!</b> ; Draw, identify and press marine algae                             |
| 3/10   | Marine Ecology   | <a href="#">Waikiki Aquarium</a> ; Lab handout & worksheet   |
| 3/17   | <b>SPRING BREAK!</b>   |  |
| 3/24   | Coral Bleaching & Fish Size Survey<br>Check Out Eyes of the Reef <a href="#">HERE</a>            | <a href="#">Waikiki MLCD</a> ; <b>Need Snorkel Gear!</b> Worksheet<br>Data collected and shared with <i>Eyes of the Reef</i> |
| 3/31   | Overfishing; Tuna big data lab   | Watch “End of the Line” <a href="#">HERE</a> in Lab; Worksheet<br>Solution Video w/David Attenborough <a href="#">HERE</a>   |
| 4/7  | A Healthy Reef   | <a href="#">Hanauma Bay</a> ; <b>Need Snorkel Gear!</b> Worksheet  |
| 4/14   | An Analysis of Tide Pool Ecosystems  | <a href="#">Makapu`u Beach Park</a> (Costco early dinner after!)   |
|  4/21 | <b>Formal Lab Write-up Info Lab</b>  | <b>Bring your data sheets and laptops!!!</b>   |



**Other official statements that apply to all courses at Chaminade:**

**Academic Honesty:** Academic honesty is an essential aspect of all learning, scholarship, and research. It is one of the values regarded most highly by academic communities throughout the world. Violations of the principle of academic honesty are extremely serious and will not be tolerated.

Students are responsible for promoting academic honesty at Chaminade by not participating in any act of dishonesty and by reporting any incidence of academic dishonesty to an instructor or to a University official. Academic dishonesty may include theft of records or examinations, alteration of grades, and plagiarism, in addition to more obvious dishonesty.

Questions of academic dishonesty in a particular class are first reviewed by the instructor, who must make a report with recommendations to the Dean of the Academic Division. Punishment for academic dishonesty will be determined by the instructor and the Dean of Academic Division and may include an “F” grade for the work in question, an “F” grade for the course, suspension, or dismissal from the University.

For the most up to date information, please refer to the [Academic Honesty Policy](#) on the Chaminade University Catalog website.

**Title IX and Nondiscrimination Statement:** Chaminade University of Honolulu is committed to providing a learning, working and living environment that promotes the dignity of all people, inclusivity and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking. As a member of the University faculty, I am required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator.

**Nondiscrimination Policy & Notice of Nondiscrimination:** Chaminade University of Honolulu does not discriminate on the basis of sex and prohibits sex discrimination in any education program or activity that it operates, as required by Title IX and its regulations, including in admission and employment. Inquiries about Title IX may be referred to the University’s Title IX Coordinator, the U.S. Department of Education’s Office for Civil Rights, or both and contact information may be found at the [Chaminade University Title IX Office Contact Information and Confidential Resources website](#). On-campus Confidential Resources may also be found here at [CAMPUS CONFIDENTIAL RESOURCES](#).

The University’s Nondiscrimination Policy and Grievance Procedures can be located on the University webpage at: <https://chaminade.edu/compliance/title-ix-nondiscrimination-policies-procedures/>.

To report information about conduct that may constitute sex discrimination or make a complaint of sex discrimination under Title IX, please refer to the [Campus Incident Report form](#). Chaminade University of Honolulu prohibits sex discrimination in any education program or activity that it operates. The NOTICE of NONDISCRIMINATION can be found here: [Notice of Nondiscrimination](#).

**CUH Alert Emergency Notification:** To get the latest emergency communication from Chaminade University, students’ cell numbers will be connected to Chaminade’s emergency notification text system. When you log in to the Chaminade portal, you will be asked to provide some emergency contact information. If you provide a cellphone number, you will receive a text from our emergency notification system asking you to confirm your number. You must respond to that message to complete your registration and get emergency notifications on your phone.

**Assessment for Student Work:** With the goal of continuing to improve the quality of educational services offered to students, Chaminade University conducts assessments of student achievement of course, program, and institutional learning outcomes. Student work is used anonymously as the basis of these assessments, and the work you do in this course may be used in these assessment efforts.

**Student with Disabilities Statement:** Chaminade University of Honolulu offers accommodations for all actively enrolled students with disabilities in compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and the ADA Amendments Act (2008).

Students are responsible for contacting Kokua Ike: Center for Student Learning to schedule an appointment. Verification of their disability will be requested through appropriate documentation and once received it will take up to approximately 2–3 weeks to review them. Appropriate paperwork will be completed by the student before notification will be sent out to their instructors. Accommodation paperwork will not be automatically sent out to instructors each semester, as the student is responsible to notify Kokua Ike via email at [ada@chaminade.edu](mailto:ada@chaminade.edu) each semester if changes or notifications are needed.

**Kōkua ‘Ike: Tutoring & Learning Services:** Chaminade is proud to offer free, one-on-one tutoring and writing assistance to all students. Tutoring and writing help is available on campus at Kōkua ‘Ike: Center for Student Learning in a variety of subjects (including, but are not limited to biology, chemistry, math, nursing, English, etc.) from trained Peer and Professional Tutors. Please check Kōkua ‘Ike’s website for the latest times, list of drop-in hours, and information on scheduling an appointment. Free online tutoring is also available via TutorMe. Tutor Me can be accessed 24/7 from your Canvas account. Simply click on Account > TutorMe. For more information, please contact Kōkua ‘Ike at [tutoring@chaminade.edu](mailto:tutoring@chaminade.edu) or 808-739-8305.